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- (21) Application No. 29704/73 (22) Filed 22 Dec. 1973 (19)
 (23) Complete Specification filed 20 March 1975
 (44) Complete Specification published 16 June 1977
 (51) INT. CL.² F21S 1/00 F24C 15/04 F21V 21/14 29/00
 (52) Index at acceptance

F4R 269 27Y 284 28Y 334 392 39Y 424 43Y 44X 44Y
 466 480 524 599
 A4D N5
 F4W 8

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(54) IMPROVEMENTS IN OR RELATING TO OVENS

(71) We, GLYNWED DOMESTIC AND HEATING APPLIANCES LIMITED, P.O. Box No. 7, Audenshaw Works, Corporation Road, Audenshaw, Manchester, M34 5LS, a British Company, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention concerns ovens, and in particular internal lighting arrangements therefor.

In many ovens, such as domestic ovens, the internal light is positioned at the rear of the oven compartment and usually adjacent the top of the oven. Whilst such an arrangement does provide light in the oven, there are certain inherent disadvantages in so locating the light, not at least of which is the fact that being in a remote position relative to the door of the oven, it is difficult for a user to clean the glass cover of the light which often becomes covered with grease. If such covering of grease is not removed, it is found that it carbonises and becomes extremely difficult to remove. This inevitably reduces the amount of illumination. Furthermore, by locating the lighting arrangement in the upper rear part of the oven, articles placed on the shelves are seen, to some extent, in silhouette, and in any event the light is directed into the eyes of the user.

The object of the present invention is to provide an oven having a lighting arrangement which does not suffer from the disadvantages briefly outlined above.

The oven, according to the present invention, has a door with a luminous source contained within the door and arranged to illuminate the oven interior.

The invention is preferably realised by having a door which comprises a frame supporting inner and outer windows and the luminous source comprises at least one

electric lamp holder located adjacent one edge of the door in which holder a lamp can be fitted to illuminate the oven interior.

The invention will now be described further with reference to the accompanying drawings which shows an oven door for an oven according to the present invention. (The door only is shown as the other parts of the oven have no features which are critically related to the invention).

In the drawings:

Fig. 1 shows an elevation of one corner of the door with various parts broken away to expose underlying parts;

Fig. 2 is a section on the line II—II of Fig. 1; and

Fig. 3 shows detail of a window of the door.

In Figs. 1 and 2 the oven door has a base pressing 10 which is formed in the manner of a rectangular frame and in which is located an inner glass window 11 secured by clips (not shown) in a known manner. The frame 10 is recessed to accommodate an asbestos sealing ring 12 held by press fasteners 13. The hinged side of the frame 10 has a recessed part 14 to which is secured a plate 15 by self-tapping screws 16. The plate 15 has secured to it a bracket 17 to which is rivetted an insulating block 18 by rivets 19. The block 18 has rivetted to it, by rivets 20, lamp contact springs 21 and connector tabs 22. A festoon lamp 23 is shown between the springs 21.

An outer glass window 24 is supported by clips 24a and has a trim 25 which includes a side trim 26 which is removable by releasing self tapping screws 27 to expose screws 16 to permit removal of plate 15, bracket 17 and lamp 23 for renewal of the lamp.

A reflector 28 is provided behind the lamp 23, the reflector being shown partly broken away to expose the lamp 23. The reflector is in the form of a strip held by screws 29 and extends over most of the

length of that edge of the door fitted with lamps 23. (Whilst only one lamp 23 is shown a second lamp is provided at a higher part of the door).

5 Wires 30 to the lamp 23 are shown passing through the trim 25, frame 10 and corner strengthening bracket 31 at a bush 32. The bush 32 may co-operate with a domed hinge thimble (not shown) to form a hinge
10 for the door. The thimble would be bored to allow the wires 30 to pass through.

In Fig. 3, one corner of the window 24 is shown. The window has cross-hatching 34 to indicate an opaque area. The line
15 35 represents the transparent area of the window. The relative position of window 11 is shown by dash lines 11, while decorative lines 36 are added to window 24.

20 The windows 11, 24 may be of tinted glass.

The outer window may be replaced by a heat insulated hinged cover or may additionally have a hinged cover.

25 For ovens used for industrial purposes and higher temperatures than domestic ovens, a directed cooling system could be employed to keep the electrical components at an acceptable temperature. The outer window could be double glazed to
30 keep it cool.

Bayonet fitting and screw cap lamps could be used. Fluorescent and cold cathode lamps may also have an application. Light sources could be provided on more than one
35 edge of the door. A light source could be provided to illuminate the oven interior when the door is in the open position. The light source could swivel with the door opening to keep light directed in the oven. Heat reflectors could be provided between
40 windows 11 and 24 which could be movable to expose the interior of the oven. The oven door could be a drop or sliding door or hinged on any edge.

45 The lamps 23 will preferably be responsive to oven door opening and closing. An additional switch may be provided to allow the lamps 23 to be held continuously on or continuously off, or temporarily on
50 and off.

A typical spacing between windows 11 and 24 is about 25 mm. The bracket 15 for the lamp 23 could be integrated with the removable side trim 26 so that on removal
55 of the trim the lamp 23 would also be available. The reflector 28 could be made removable with the lamp 23 for cleaning.

60 Preferably the lamp 23 is powered from a voltage reducing transformer as this not only improves safety but allows a more

robust lamp to be used. The transformer may be secured to the base of the oven.

The invention has application to gas and oil-fired ovens for domestic, catering and industrial use.

As the lamp 23 is located inside the door it is not susceptible to damage or blackening from use of the oven.

WHAT WE CLAIM IS:—

1. An oven having a door with a luminous source contained within the door and arranged to illuminate the oven interior.

2. An oven as claimed in claim 1 in which the door comprises a frame supporting inner and outer windows and the luminous source comprises at least one electric lamp holder located adjacent one edge of the door in which holder a lamp can be fitted to illuminate the oven interior.

3. An oven as claimed in claim 2 in which the door is hinged and said edge is the hinged edge of the door.

4. An oven as claimed in claim 2 or 3 in which the luminous source includes a reflector arranged so that the reflector acts, with the oven door closed, to aid the illumination of the oven interior and acts to screen light from the source emerging from the door.

5. An oven as claimed in any preceding claim in which the luminous source comprises a transformer whereby mains voltage may be reduced to a lower safe voltage.

6. An oven as claimed in any one of claims 2, 3, 4 or 5 having at least one switch to control the luminous source responsive to the oven door opening and closing.

7. An oven as claimed in claim 6 having an additional switch whereby the luminous source may be powered with the oven door closed.

8. An oven as claimed in any one of claims 2, 3, 4, 5, 6 or 7 in which electrical leads to power the luminous source enter the oven door through hollow hinge pins for the door.

9. An oven as claimed in claim 2, having masking on at least one of the windows.

10. An oven, according to claim 1, having a door substantially as hereinbefore described with reference to the accompanying drawings.

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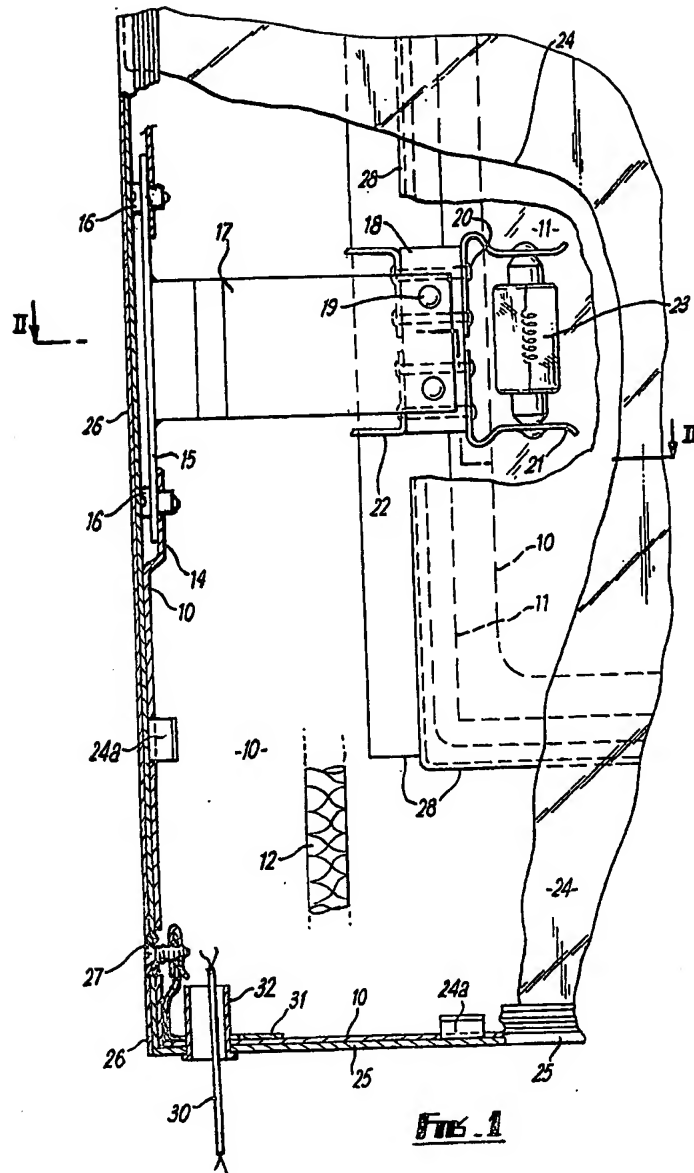
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Sheet 1



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